

## REMARKS/ARGUMENT

Claim 28 has been added and claims 23 and 24 have been amended.

Accordingly, claims 1-28 are currently pending in the present application.

Applicant would like to thank the Examiner for allowing claims 1-21 and for indicating that claims 23-27 would be allowable if rewritten in independent form to include all of the limitations of the base claim and any intervening claims. Applicant has rewritten claims 23 and 24 in accordance with the Examiner's suggestion. Claims 25-27 have been left unchanged, as these claims ultimately depend from now allowable claim 24. It is respectfully submitted that the amendments do not add new matter and have adequate support throughout the Specification. Furthermore, Applicant would like to make clear that the amendments to claims 23 and 24 were not made for purposes of patentability or to avoid the prior art, but rather were made for the sole purpose of placing allowable subject matter in allowable condition, as suggested by the Examiner. By making such amendments, Applicant is not intending to relinquish any scope of equivalents of these claims to the public domain.

Otherwise, Applicant respectfully traverses all claim rejections for the reasons that follow:

### I. REJECTION OF CLAIM 22

Claim 22 was rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Published Patent Application No. 2004/0070906 to Kohout et al. (hereinafter "Kohout"). Respectfully, Applicant traverses.

Claim 22 relates to "[a] phase output arrangement . . . comprising: an arrangement configured to shutdown the high-side and low-side switches of the output switch arrangement if a signal representing an output current of the buck converter falls below a **programable threshold signal.**"

Kohout relates to a synchronous DC-DC regulator having an undercurrent circuit adapted to sense a driving current flowing through a driver circuit of the DC-DC regulator. When the driving current is less than a predetermined amount, a disable signal is generated for turning off the driver circuit. (Kohout, Abstract). The predetermined amount is set by choosing

the current rating of a fixed current source I2. (Kohout, ¶ 32). The drive current is then compared to current source I2, with the disable signal being generated if the drive current is less than the current value of current source I2. (Kohout, ¶ 32). The disable signal is operable to shut down **only** the low-side switch. (Kohout, ¶ 15).

It is respectfully submitted that Kohout does not disclose "an arrangement configured to shutdown . . . the output switch arrangement if a signal representing an output current of the buck converter falls below a **programmable threshold signal**," as recited in claim 22. As described above, Kohout discloses a **fixed** predetermined amount set by choosing the current rating of a **fixed** current source. Applicant agrees that the fixed current source must be "predetermined," as suggested by the Examiner. However, "predetermined" is not the same as "programmable." As recited within the text of claim 2, the threshold signal is "programmable" (i.e., may be **programmably set** to provide a particular threshold level), for example, by "a digital-to-analog converter operable to convert a digital representation of the desired threshold signal . . . into an analog threshold signal . . . ." This feature is clearly missing from Kohout.

Further regarding claim 22, it is respectfully submitted that Kohout does not disclose "an arrangement configured to shutdown the high-side and low-side switches of the output switch arrangement," as recited in this claim. As described above, the disable signal of Kohout is operable to shut down **only** the low-side switch if the drive current is less than the current value of current source I2. Kohout simply does not disclose shutting down **both** the low-side and high-side switches, as recited in claim 22.

For at least the foregoing reasons, it is respectfully submitted that claim 22 is allowable over Kohout. Accordingly, it is kindly requested that the rejection of claim 22 under 35 U.S.C. § 102(e) be withdrawn.

## II. NEW CLAIM 28

Claim 28 has been added herein. This claim recites "[a] buck converter according to claim 2, wherein each of the phase output arrangements is operable to shutdown the respective output switch arrangement by shutting down both the respective high-side and low-side switches." It is respectfully submitted that claim 28 is allowable over Kohout at least

because this reference does not disclose shutting down both the low-side and high-side switches upon detection of an under-current condition. Rather, Kohout discloses only that the low-side switch is disabled.

### III. NEW REFERENCE

Pursuant to the duty of candor, Applicant brings to the Examiner's attention U.S. Patent No. 6,674,274 to Hobrecht et al. (hereinafter "Hobrecht"). Hobrecht relates to a multiple phase switching regulator with stage shedding capability. As characterized, a comparator monitors the load current and causes one or more single stage switching regulators to turn off if the load current falls below a current threshold. (Hobrecht, Abstract). Hobrecht explicitly states that the current threshold is provided by a "**fixed voltage threshold** at the non-inverting input of [a] comparator . . . ." (Hobrecht, col. 5, lines 53-55). Thus, like Kohout, Hobrecht fails to disclose the critical "programmability" of independent claims 1 and 22. Accordingly, it is respectfully submitted that claims 1-28 are allowable over Hobrecht.

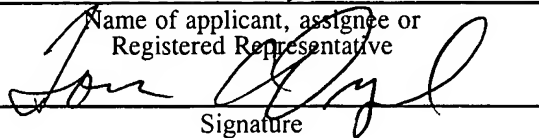
### IV. CONCLUSION

In view of the foregoing, it is respectfully submitted that all pending claims are currently in allowable condition. Accordingly, reconsideration and prompt allowance of all pending claims is therefore earnestly solicited.

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA, 22313-1450, on June 22, 2004:

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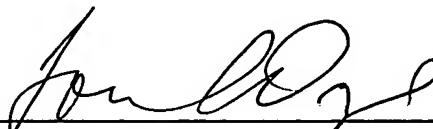
  
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Respectfully submitted,



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